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(54) PRODUCTION OF HIGH TENSILE NON-ORIENTED ELECTRICAL STEEL SHEET

(57)Abstract:

PURPOSE: To obtain a titled steel sheet exhibiting high tensile strength and having excellent soft magnetic characteristics such as low high-frequency iron loss and low coercive force by hot-rolling a blank slab of a silicon steel having a specific component compsn. to a hot-rolled steel sheet then subjecting repeatedly the sheet to warm-rolling in a prescribed temp. range to form the sheet into a final thickness and subjecting such sheet to final finish annealing.

CONSTITUTION: The blank slab of a silicon steel contg., by weight %, 3.5W7.0 as well as ≤ 20.0 1 kinds among 0.05W3.0 Ti, 0.05W3.0 Mo, 0.1W11.5 Mn, 0.1W20.0 Ni, 0.5W20.0 Co and 0.5W13.0 Al is treated in the following way. The slab is hot-rolled at 800W1,350° C and is thereafter subjected to normalizing annealing at 750W1,100° C according to need. The hot-rolled sheet after annealing is subjected repeatedly to warm-rolling at 100W600° C and is rolled down to 0.1W0.35mm final thickness. The steel sheet rolled to the final thickness is annealed at 850W1,200° C by which the high-tensile non-oriented electrical steel sheet satisfying $\geq 50\text{kg/mm}^2$ tensile strength, $\geq 1.5\text{T}$ magnetic flux density B50 and $\leq 100\text{W/kg}$ iron loss W10/ 1,000 is obtd.